



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1479; Project Identifier AD-2022-00703-T; Amendment 39-22497; AD 2023-13-12]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all The Boeing Company Model 737-100, 737-200, 737-200C, 737-300, 737-400, 737-500, 737-600, 737-700, 737-700C, 737-800, 737-900, 737-900ER, 757-200, 757-200PF, 757-200CB, 757-300, 767-200, 767-300, 767-300F, and 767-400ER series airplanes.

This AD was prompted by reports indicating premature aging of certain passenger chemical oxygen generators. This AD requires repetitively replacing affected chemical oxygen generators with serviceable parts. This AD also limits the installation of affected parts. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1479; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is

U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Nicole S. Tsang, Aviation Safety Engineer, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3959; email: nicole.s.tsang@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all The Boeing Company Model 737-100, 737-200, 737-200C, 737-300, 737-400, 737-500, 737-600, 737-700, 737-700C, 737-800, 737-900, 737-900ER, 757-200, 757-200PF, 757-200CB, 757-300, 767-200, 767-300, 767-300F, and 767-400ER series airplanes. The NPRM published in the *Federal Register* on December 9, 2022 (87 FR 75528).

The NPRM was prompted by reports indicating premature aging of certain passenger chemical oxygen generators. In the NPRM, the FAA proposed to require repetitively replacing affected chemical oxygen generators with serviceable parts, and to limit the installation of affected parts. The FAA is issuing this AD to address the premature aging that resulted in the chemical oxygen generators failing to activate, which could fail to deliver oxygen during an emergency, possibly resulting in injury to the airplane occupants.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from the Air Line Pilots Association, International, and The Boeing Company. Both commenters supported the NPRM without change.

The FAA received additional comments from Delta Air Lines, American Airlines, United Airlines, and United Parcel Service. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Clarify Service Life of Affected Parts

American Airlines requested clarification on why paragraph (i)(3) of the proposed AD allows chemical oxygen generators to remain in service longer than 10 years.

American Airlines stated that paragraph (i)(3) of the proposed AD contradicts paragraph (h) of the proposed AD and leads to confusion.

The FAA agrees to clarify. Currently, there are units with a manufacturing date older than 10 years that are potentially installed on airplanes, and these units might be included in the group identified in paragraph (i)(3) of this AD. After the initial replacement required by paragraph (i)(3) of this AD, the introductory text to paragraph (i) of this AD requires operators to replace affected units before exceeding 10 years since date of manufacture. To determine the appropriate compliance time for paragraph (i)(3) of this AD, the FAA assessed the failure rate of the units, the number of suspect units, and the probability of an unsafe outcome. The FAA has not changed this AD in this regard.

Request to Remove the 30-Day Compliance Time for Inspection of Part Numbers.

American Airlines and Delta Air Lines requested removing the 30-day compliance time for the inspection of the chemical oxygen generators part numbers. American Airlines stated that inspecting the part numbers alone does not provide any increase in safety and will severely disrupt the regular maintenance of the airplane with the potential to impact passengers if other work has to be postponed to meet a 30-day inspection requirement. Instead of requiring the 6-, 12-, and 24-month replacement, American Airlines suggested allowing 12 months to inspect and correct the units. Delta Air Lines recommended allowing operators to use existing methods to obtain chemical

oxygen generator part numbers and dates of manufacture at a time that works within the needs of their operation rather than within 30 days. Delta Air Lines stated that the existing methods have already been reviewed by the operators' Certificate Management Office (CMO) and is FAA approved.

The FAA disagrees with the request to remove the 30-day compliance time for the part number inspection. The FAA disagrees with Delta Air Lines' recommendation to allow operators' existing methods to inspect the chemical oxygen generators part numbers and date of manufacture that work within the needs of their operation rather than within this AD's compliance time. The FAA also disagrees with replacing this AD's proposed compliance times with the American Airlines' proposed 12-month compliance time to inspect and correct units. The commenter did not provide justification to substantiate how a 12-month compliance time to inspect and correct units provides an acceptable level of safety. Passenger chemical oxygen generators identified in paragraph (i)(1) of this AD must be replaced sooner than the proposed 12-month compliance time. After considering all of the available information, the FAA determined that the compliance time, as proposed, represents an appropriate interval of time in which the required actions can be performed in a timely manner within the affected fleet, while still maintaining an adequate level of safety. When developing the compliance time, the FAA considered the estimated hours to complete the inspection and replacements and the availability of parts. There are provisions in paragraph (g) of this AD that allow review of the airplane maintenance records in lieu of an inspection, provided the date of manufacture can be conclusively determined by that review. Under the provisions of paragraph (k) of this AD, operators may apply for an extension of the compliance times by providing rationale explaining why a compliance time extension provides an acceptable level of safety. The FAA has not changed this AD in this regard.

Request to Remove Inspection for Retired and Long-term Storage Airplanes

American Airlines requested that inspection of retired airplanes or airplanes in long-term storage not be required until the airplane goes into service.

The FAA agrees that operators are not required to inspect retired airplanes because retired airplanes are not in service. And the FAA agrees that airplanes in long-term storage are not required to comply with the requirements of this AD until the airplane goes into service (14 CFR 39.7). If the compliance time has passed before a stored airplane is returned to service, it is not a violation. A violation occurs only if a product is operated that does not meet the requirements of an AD. Under the provisions of paragraph (k) of this AD, an operator who is unable to accomplish the inspection in this AD within the specified compliance time may request an alternative method of compliance (AMOC) to extend this time. The FAA has not changed this AD in this regard.

Request Six Months to Revise Manuals

American Airlines requested six months to revise applicable manuals.

The FAA disagrees with the request to require six months to revise applicable manuals. This AD requires only inspection of the chemical oxygen generator part numbers and replacement of chemical oxygen generators. This AD does not mandate revising applicable manuals. The FAA has not changed this AD in this regard.

Request Six Months to Purge Inventory

American Airlines requested six months to purge inventory of P/N 117080-XX chemical oxygen generators.

The FAA disagrees with the request to require six months to purge inventory of P/N 117080-XX chemical oxygen generators. This AD requires only inspection of the chemical oxygen generator part numbers and replacement of chemical oxygen generators.

This AD does not mandate purging inventory of P/N 117080-XX chemical oxygen generators. The FAA has not changed this AD in this regard.

Request to Confirm Life Limit of AVOX Systems Part Number P/N 807218-03

American Airlines requested confirmation that FAA has determined AVOX Systems part number (P/N) 807218-03 does not have the same problems as P/N 117080-04 and continues to be an approved part number with a life of 15 years from the date of manufacture. AVOX Systems P/N 807218-03 has been qualified to both Boeing Spec S417T401-44 (or Drager P/N E71740-00) and Boeing Spec S417T401-60 (or Collins P/N 117080-04).

The FAA confirms that AVOX Systems P/N 807218-03 does not have the same problems as P/N 117080-04. The life limit for AVOX Systems P/N 807218-03 is 15 years from the date of manufacture. Because this AD does not address P/N 807218-03, no change to this AD is necessary.

Effect of Winglets on Accomplishment of the Proposed Actions

Aviation Partners Boeing stated that the installation of winglets per Supplemental Type Certificate (STC) ST00830SE, STC ST01219SE, STC ST01518SE, and STC ST01920SE on applicable Boeing models subject to the proposed AD does not affect compliance with the mandated actions.

The FAA agrees with the commenter that STC ST00830SE, STC ST01219SE, STC ST01518SE, and STC ST01920SE do not affect the ability to accomplish the actions required by this AD. The FAA has not changed this AD in this regard.

Request Use of Illustrated Parts Catalog to Determine Approved Part Numbers

Delta Air Lines requested clarification on how to determine whether a part number is approved. Paragraph (h)(2) of this AD does not have any provision to allow operators to determine if a part number is approved. Delta Air Lines assumed operators

may use the airplane Illustrated Parts Catalog (IPC) to determine acceptable approved alternate parts.

The FAA confirms that operators may use the airplane IPC to determine acceptable approved part numbers. The FAA has not changed this AD in this regard.

Request to Define Acceptable Replacement Chemical Oxygen Generators

Delta Air Lines requested that paragraph (i) of the proposed AD be revised to explicitly state that chemical oxygen generators be replaced with serviceable units during the repetitive replacement.

The FAA agrees with the comment and has revised the introductory text to paragraph (i) of this AD accordingly.

Request to Limit Replacement Requirement Based on Date of Manufacture

Delta Air Lines suggested that paragraph (i) of the proposed AD be revised to state that no replacement is necessary for affected passenger chemical oxygen generators that have a date of manufacture in 2014 or later. Delta inferred that since these generators would have a manufacture date of 2014 or later, and therefore be within the new 10-year life limit, replacement would not be mandated per the proposed AD.

The FAA disagrees that units that have a date of manufacture in 2014 or later need not be replaced. The FAA has added paragraph (i)(4) of this AD to clarify that units with a date of manufacture in 2014 or later must be replaced before exceeding 10 years since the date of manufacture, with a 24-month grace period that will allow for timely and orderly replacement of units that are close to their 10-year life limit.

Request to Clarify Affected Airplanes

The United Parcel Service (UPS) Airlines requested limiting the proposed AD to apply only to the affected airplane models with part number 117080-02, 117080-03, or 117080-04 chemical oxygen generators installed. The commenter noted that the proposed AD would require accomplishment of paragraphs (g) and (i) on all of the airplane models

covered by paragraph (c) of the proposed AD, even if an applicable airplane does not have part number 117080-02, 117080-03, or 117080-04 installed.

The FAA disagrees with the commenter's request. The FAA determined that the part number 117080-02, 117080-03, or 117080-04 chemical oxygen generators are rotatable. This AD therefore applies to all airplanes of the affected models to ensure that no person installs a non-serviceable passenger chemical oxygen generator on an airplane that was initially delivered with an acceptable unit, thereby subjecting that airplane to the unsafe condition. The FAA has not changed this AD in this regard.

Additional Change to AD

The compliance time in paragraph (i)(1) of this AD has been adjusted to accommodate airplanes with generators close to the 15-year life limit as of the effective date of the AD. This change is not more restrictive than what was proposed, and does not expand the scope of the requirement as specified in the proposed AD.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information

Collins Aerospace Service Information Letter (SIL) 117080-SIL-002, dated May 4, 2022, specifies procedures for replacing affected chemical oxygen generators.

Costs of Compliance

The FAA estimates that this AD affects 3,419 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	4 work-hours X \$85 per hour = \$340	\$0	\$340	\$1,162,460
Replacement	0.50 work-hour X \$85 per hour = \$43 per replacement cycle	Up to \$445	Up to \$488 per replacement cycle	\$1,668,472 per replacement cycle

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2023-13-12 The Boeing Company: Amendment 39-22497; Docket No. FAA-2022-1479; Project Identifier AD-2022-00703-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model 737-100, 737-200, 737-200C, 737-300, 737-400, 737-500, 737-600, 737-700, 737-700C, 737-800, 737-900, 737-900ER, 757-200, 757-200PF, 757-200CB, 757-300, 767-200, 767-300, 767-300F, and 767-400ER series airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 35, Oxygen.

(e) Unsafe Condition

This AD was prompted by reports of premature aging of certain chemical oxygen generators. The FAA is issuing this AD to address this premature aging that resulted in the generators failing to activate, which could fail to deliver oxygen during an emergency, possibly resulting in injury to the airplane occupants.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Oxygen Generator Part Number Inspection

Within 30 days after the effective date of this AD: Inspect passenger chemical oxygen generators having part numbers 117080-02, 117080-03, and 117080-04 to determine their date of manufacture. A review of airplane maintenance records is acceptable for the inspection, provided the date of manufacture can be conclusively determined by that review.

(h) Definition

For purposes of this AD, a serviceable unit is a passenger chemical oxygen generator that meets the condition specified in either paragraph (h)(1) or (2) of this AD.

(1) Part numbers 117080-02, 117080-03, and 117080-04, with a manufacturing date not older than 10 years.

(2) Approved part numbers other than 117080-02, 117080-03, and 117080-04, provided the generator has not exceeded the life limit established for that generator by the manufacturer.

(i) Oxygen Generator Replacement

For any passenger chemical oxygen generators having part numbers 117080-02, 117080-03, and 117080-04: At the applicable time specified in paragraph (i)(1) through (4) of this AD, replace the chemical oxygen generator with a serviceable unit, as defined in this AD. Thereafter, replace chemical oxygen generators having part numbers 117080-

02, 117080-03, and 117080-04 with serviceable units, as defined in this AD, before exceeding 10 years since date of manufacture.

Note 1 to paragraph (i): Additional guidance for replacing the affected passenger chemical oxygen generators can be found in Collins Aerospace Service Information Letter 117080-SIL-002, dated May 4, 2022, and approved maintenance procedures.

(1) After doing the inspection in paragraph (g) of this AD: If the passenger chemical oxygen generator has a date of manufacture in 2008 or earlier, replace before further flight or within 15 years since the date of manufacture, whichever occurs later.

(2) For passenger chemical oxygen generators that have a date of manufacture in 2009 or 2010: Replace within 12 months after the effective date of this AD.

(3) For passenger chemical oxygen generators that have a date of manufacture in 2011, 2012, or 2013: Replace within 24 months after the effective date of this AD.

(4) For passenger chemical oxygen generators that have a date of manufacture in 2014 or later: Replace before exceeding 10 years since the date of manufacture, or within 24 months after the effective date of this AD, whichever occurs later.

(j) Parts Installation Limitation

As of the effective date of this AD, no person may install a passenger chemical oxygen generator, unless the oxygen generator is a serviceable unit, as defined in this AD.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Continued Operational Safety Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in

paragraph (l)(1) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Continued Operational Safety Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(l) Related Information

(1) For more information about this AD, contact Nicole S. Tsang, Aviation Safety Engineer, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3959; email: nicole.s.tsang@faa.gov.

(2) For Collins Aerospace service information identified in this AD that is not incorporated by reference, contact Collins Aerospace, 15701 West 95th Street, Lenexa, KS 66219; email ISPublications@collins.com; website tpi.beaerospace.com/Authentication. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(m) Material Incorporated by Reference

None.

Issued on June 30, 2023.

Michael Linegang, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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